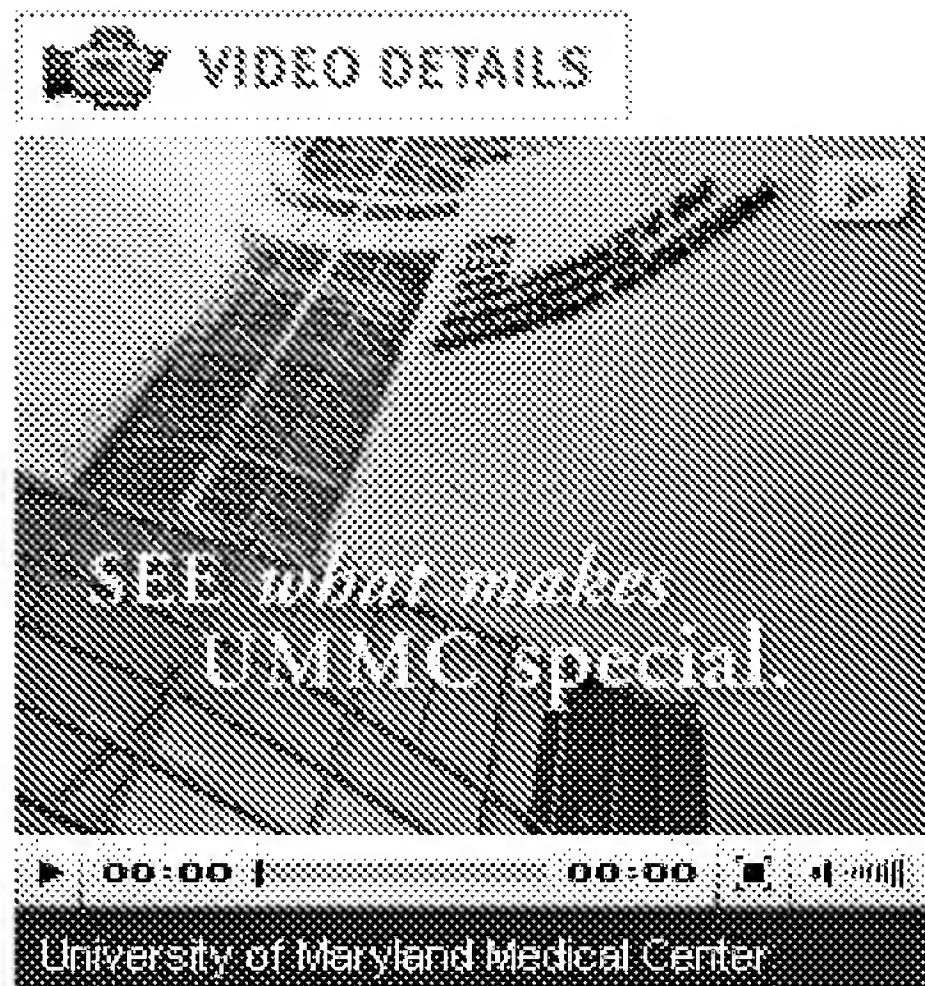


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Cirrhosis

Introduction:

Cirrhosis is a condition that causes scarring of the liver as a result of chronic liver disease. Scarring blocks blood and bile flow through the liver and keeps it from working properly.

As the largest internal organ in the body, the liver performs many vital tasks. For example, it gets rid of or neutralizes toxins (such as poisons, germs, and bacteria) in the blood and controls infection. The liver also produces proteins that regulate blood clotting and bile that helps your body absorb fats and fat-soluble vitamins.

Cirrhosis is irreversible, but it progresses slowly, so early treatment can help prevent more damage. As liver function worsens, you may experience fatigue, weight loss, swelling in your legs and abdomen, and jaundice. If the disease is severe enough, it can be fatal.

The most common causes of cirrhosis in the United States are excessive use of alcohol and chronic infection with the hepatitis C virus.

Signs and Symptoms:

Symptoms of cirrhosis can range from an absence of symptoms to outright liver failure.

The most common symptoms include:

- Fatigue and weakness
- Loss of appetite, weight loss, and nausea
- Small, red spider-like blood vessels under the skin
- Yellowing of the skin and eyes (jaundice)
- Redness of the palms of the hands (palmar erythema)
- Swelling of the belly caused by fluid retention (ascites)
- Swelling of the legs, feet, and back caused by fluid buildup (edema)
- Whole body itching (called pruritus)
- Mental confusion (called hepatic encephalopathy), caused by a buildup in the blood of harmful toxins
- Vomiting blood (from enlarged veins in the esophagus due to portal hypertension; see Complications section).

Causes:

The most common cause of liver disease in the United States is alcohol abuse.

Drinking excessive amounts of alcohol on a regular basis almost always causes liver damage, although not necessarily cirrhosis. Consuming 32 - 48 oz. of beer, 4 - 8 oz. of liquor, or 16 - 32 oz. of wine every day for 10 - 15 years or longer increases your chances significantly of developing cirrhosis. How much alcohol you drink, how often, and for how many years are more important factors what kind of alcohol you drink.

Other causes of cirrhosis include:

- Chronic hepatitis B and hepatitis C
- Inherited diseases -- such as cystic fibrosis

- Autoimmune inflammation of the liver (the body's own immune system attacks the liver)
- Blocked bile ducts
- Nonalcoholic fatty liver disease (where fat deposits build up in the liver and cause scar tissue to form)
- Metabolic disorders of iron and copper (hemochromatosis and Wilson's disease respectively) each of which can deposit in the liver
- Medications or exposure to toxic substances.

Risk Factors:**Related to alcohol:**

- Women can develop liver disease even though they may drink less than men.
- Obesity may increase your chances of developing alcoholic liver disease because of fatty deposits in the liver.

Other factors:

- Inherited diseases, such as hemochromatosis and Wilson's disease
- Certain medical conditions
- Chronic hepatitis B or C

Diagnosis:

Your doctor will take a detailed history to try to determine the cause of your liver disease and to see if your symptoms might be related to something else. Then, the doctor will examine you closely for signs of liver disease, including yellowing (jaundice) of your eyes and skin, red spider-like blood vessels just under the surface of your skin, and redness of your palms.

Your doctor will press on your abdomen to feel the size of your liver. In the early stages of liver disease, the liver may be enlarged and firm, but it shrinks as scar tissue forms.

Your doctor may order other tests, such as blood tests to look for certain liver enzymes, a bilirubin test, an ultrasound, CT scan, or MRI, or a liver biopsy.

Prevention:

- Drink only in moderation.
- Take precautions to avoid contracting hepatitis B and C (such as being careful if your occupation exposes you to blood or blood products, practicing safe sex, getting a hepatitis B vaccine).
- See your doctor regularly if you have chronic hepatitis.

Treatment:

Cirrhosis is irreversible, but you can slow down the progression of the disease. Treatment depends on the underlying cause. For example, abstaining from alcohol, or taking interferon or other medications to build up your immune system if you have chronic viral hepatitis. Your doctor will also treat complications, such as giving you blood pressure medications to control portal hypertension or drugs to stop bleeding veins. In certain cases liver transplant will be necessary.

Lifestyle

If you have cirrhosis from any cause, it is vital to abstain from drinking alcohol to prevent further damage to the liver. If your cirrhosis is caused by alcoholism, your doctor may suggest Alcoholics Anonymous as a good place to start your rehabilitation and maintain your abstinence.

Medications that may cause liver damage must also be stopped. For example, acetaminophen (Tylenol) can cause liver damage if taken in large quantities or by people who drink alcohol regularly. Nonsteroidal anti-inflammatory drugs can also damage the liver, as can some herbs and supplements. If you have liver disease, do not take any over-the-counter medication, herbs, or supplements without first checking with your doctor.

Making changes in your diet, such as lowering salt intake, may be necessary to treat complications of cirrhosis.

Medications

Medications can treat complications such as bleeding from veins, infections in fluid accumulated in the abdomen, and damage to the brain (encephalopathy) caused by toxins circulating in the blood.

- Blood pressure medications (beta-blockers) -- to help lower portal hypertension, an increase in blood pressure in the portal vein, which brings blood to the liver from the intestine. Beta-blockers include propranolol (Inderal) and nadolol (Coregard).
- Sandostatin -- may be given to stop bleeding vessels in the esophagus or stomach by causing blood vessels to narrow.
- Diuretics (water pills) -- to help reduce the amount of fluid in your abdomen or legs. Diuretics include spironolactone (Aldactone) and furosemide (Lasix).
- Lactulose -- given for hepatic encephalopathy, brain and nervous system damage caused by a build up of ammonia in the blood. A damaged liver may not be able to cleanse the blood of ammonia, and lactulose, a synthetic sugar, can help stop your intestines from creating ammonia.

Surgery and Other Procedures

You may need a liver biopsy to determine the cause of cirrhosis and to assess the extent of liver damage. Generally this procedure involves inserting a needle through the abdominal wall to the liver to obtain tissue samples.

Surgery may be required to stop and prevent certain complications of cirrhosis:

- Endoscopic procedures to stop bleeding from blood vessels in the esophagus
- Placing a shunt to reroute blood from the liver, to lower portal hypertension
- Draining fluid from the abdomen (called paracentesis)
- Liver transplant

Nutrition and Dietary Supplements

Malnutrition is often a problem for people with cirrhosis. One of the liver's important functions is to help convert food into stored energy, as well as to rid the body of toxins. For these reasons, eating a

healthy diet is an important part of treatment for cirrhosis. You should be eating a well-balanced diet with plenty of fruits, vegetables, and whole grains. Your doctor may also talk with you about proper protein balance, and limiting your fluid and salt intake.

Dietary Restrictions

Protein

High-quality dietary protein may be particularly important for you if you have buildup of fluid in the abdomen or swelling of the feet, legs, or back. Protein also helps to repair muscle mass. But too much protein can raise ammonia levels and trigger hepatic encephalopathy (see Complications). In general, your doctor needs to determine how much protein is right for you. Your doctor may recommend eating vegetable protein (such as soy) instead of animal protein.

Sodium (salt)

If you have fluid retention, you may be asked to lower the amount of salt you consume, since salt encourages the body to retain water. Remember that lowering your salt intake will involve more than passing up the salt shaker; the foods highest in salt are processed and prepared foods. Examples of such foods are canned meats, soups, and vegetables, crackers, and cold cuts. Eat good amounts of fresh foods because they contain very little sodium. Instead of adding salt to your food, try lemon juice or black pepper to add taste.

Shellfish

Avoid raw shellfish, which may carry a bacteria called *Vibrio vulnificus* that can be dangerous to people with cirrhosis. If you are not sure how well shellfish is cooked, do not eat it.

Dietary Supplements

It is very important that you talk to your doctor before taking any supplement if you have liver disease, including the following:

- Antioxidants -- There is some preliminary evidence that antioxidants, like vitamin E and selenium, might help in treating primary biliary cirrhosis, a condition in which the bile ducts of the liver are slowly destroyed. However, a later double-blind, placebo controlled study found no benefit from a combination of vitamins A, C, E, plus selenium, methionine, and co-enzyme Q10. While there is no evidence that taking these supplements will help, you can boost the amount of antioxidants you get by eating lots of fresh fruits, vegetables, and whole grains.
- Betaine (20 g per day in two doses) -- Betaine is a nutrient that reduces homocysteine levels in the body, which are associated with heart disease and are higher in people with liver disease. Preliminary studies have suggested that betaine might be helpful in treating nonalcoholic fatty liver disease and alcohol-induced cirrhosis. In one preliminary study, 10 people with fatty liver disease took betaine for up to 1 year and had improvement in liver function tests and a reduced amount of fat and other changes in the liver itself. More research is needed.
- S-adenosylmethionine (SAME, 1,200 - 1,600 mg per day) -- SAME, a naturally occurring antioxidant that is involved in many chemical processes in the body, is best known for its antidepressant effects. But it is also involved in the processes of the liver. People with liver disease have low levels of SAME, and this may in turn lead to low levels of glutathione. Several studies seem to indicate that taking SAME may reduce symptoms of liver disease and normalize

bilirubin and liver enzyme levels. However, most of the studies have been small and some have used intravenous (IV) SAME. More studies are needed to determine what benefits SAME might provide. SAME interacts with a number of medications, including prescription antidepressants.

- Branched chain amino acids (BCAAs) -- BCAAs, which are involved in synthesizing protein in the body, have shown promise in treating hepatic encephalopathy, a brain disorder caused by a buildup of toxins in the blood. Some studies suggest that taking BCAAs can help people with chronic hepatic encephalopathy improve liver function tests and motor ability. However, not all studies show any benefit.

Herbs

The use of herbs is a time-honored approach to strengthening the body and treating disease. Herbs, like medications, contain active substances that can trigger side effects and interact with other herbs, supplements, or medications. People with liver disease must be particularly careful because the liver processes almost everything you ingest. For these reasons, you should take herbs with extreme care and only under the supervision of your doctor.

- Bupleurum (*Bupleurum chinense*) -- The Chinese herb bupleurum has anti-inflammatory properties and has been used historically to treat liver disorders. In one study, a formulation that contained bupleurum appeared to reduce the risk of liver cancer in people with cirrhosis.
- Licorice root (*Glycyrrhiza glabra*) -- Licorice root has been used in both Eastern and Western medicine to treat a variety of illnesses, including liver disease. Some preliminary data from Japanese researchers suggests that taking glycyrrhizin (an active component of licorice root) along with cysteine and glycerine might help reduce the risk of cirrhosis if you have hepatitis C. However, the formula was delivered intravenously (IV). It is not known whether taking these substances by mouth would have any effect. More studies are needed. People with high blood pressure or those who take steroids, digoxin (Lanoxin), diuretics (water pills), or anticoagulants (blood thinners such as warfarin (Coumadin) should not take licorice. Pregnant women should avoid licorice.
- Milk thistle (*Silybum marianum*, 420 mg per day standardized to 70 - 80% silymarin for cirrhosis; 240 mg two times per day of silibinin for chronic hepatitis) -- Milk thistle has been used since Greco-Roman times to treat liver problems. Several scientific studies lend support to this traditional use. They suggest that a substance in milk thistle (silymarin) can protect the liver from damage caused by viruses, toxins, alcohol, and certain drugs such as acetaminophen. However, the evidence is stronger for some conditions than others:
 - Studies are mixed as to whether milk thistle improves liver function tests or the death rate for people with alcohol-induced cirrhosis.
 - Studies are also mixed as to whether milk thistle improves liver function tests or quality of life for people with chronic active hepatitis B or C.
 - Milk thistle may reduce liver damage caused by mushroom poisoning (due to *Amanita phalloides*, or death cap mushroom)
 - Milk thistle may help protect the liver against damage from exposure to industrial toxins.

In a comprehensive review of studies on milk thistle by the U.S. Agency for Healthcare Research and Quality (AHRQ), milk thistle improved liver function in people with mild liver disease but was less effective for those with severe liver disease such as cirrhosis.

Homeopathy

Although few studies have examined the effectiveness of specific homeopathic therapies, professional

homeopaths may consider remedies, based on their knowledge and experience, for reducing the physical addiction to alcohol and for helping to treat hepatitis. Before prescribing a remedy, homeopaths take into account a person's constitutional type -- your physical, emotional, and psychological makeup. An experienced homeopath assesses all of these factors when determining the most appropriate treatment for each individual.

Remedies that may be recommended for alcoholism include:

- *Nux vomica*
- *Staphysagria*
- *Belladonna*
- *Stramonium*
- *Chelidonium*
- *Zincum*
- *Carduus marianus*

Remedies that may be recommended for hepatitis include:

- *Aconitum*
- *Belladonna*
- *Chelidonium*
- *China*
- *Lycopodium*
- *Mercurius*
- *Phosphorus*

Other Considerations:

Your doctor will use caution when prescribing medications if you have cirrhosis because many medications cause complications in someone with a weakened liver.

Similarly, certain herbs and supplements are known to cause harm to the liver or cause complications that affect those with liver disease. A short list is below; talk to your doctor before taking any herb or supplement if you have liver disease.

- Kava kava (an herb used for anxiety and tension) can be toxic to the liver and cause severe hepatitis and even liver failure in high doses.
- Vitamin A in high doses can be toxic to the liver.
- Mistletoe (*Phoradendron leucarpum*)
- Germander (*Teucrium chamaedrys*)
- European barberry (*Berberis vulgaris*)

Pregnancy

Pregnant or breastfeeding women should not use milk thistle or licorice.

Prognosis and Complications

Complications from cirrhosis include:

- Portal hypertension (buildup of pressure in the large vein supplying blood to the liver)
- Bleeding esophageal varices (enlarged veins at the lower end of the esophagus that have a tendency to bleed; caused by portal hypertension)
- Hepatic encephalopathy (brain disorder caused by buildup of toxins), which causes forgetfulness and mental confusion; may lead to coma
- Ascites (abdominal fluid retention) and bacterial peritonitis (infection of the fluid)
- Sepsis (presence of harmful organisms or their toxins in the blood or tissues)
- Liver cancer
- Kidney failure
- Osteoporosis
- Insulin resistance

Cirrhosis can be serious and life-threatening, particularly if you continue to drink alcohol. The good news is that with proper diet, medical management, and avoidance of alcohol, you can drastically slow down the rate of progression of liver damage.

Alternative Names:

Liver disease

- Reviewed last on: 9/30/2007
- Steven D. Ehrlich, N.M.D., private practice specializing in complementary and alternative medicine, Phoenix, AZ. Review provided by VeriMed Healthcare Network.

Supporting Research

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